



25670

UNITED STATES GENERAL ACCOUNTING OFFICE
WASHINGTON, D.C. 20548

RESOURCES, COMMUNITY,
AND ECONOMIC DEVELOPMENT
DIVISION

B-212122

JULY 1, 1983

The Honorable William D. Ruckelshaus
Administrator, Environmental Protection Agency

Dear Mr. Ruckelshaus:

Subject: Better Coordination Is Needed Between Pesticide
Misuse Enforcement Programs and Programs For
Certifying and Training Individuals To Apply
Pesticides (GAO/RCED-83-169)

The Congress established the Pesticide Applicator Certification and Training Program to ensure that users of restricted-pesticide products are qualified to handle and apply these pesticides without harming the public, the environment, or themselves. The Congress gave the States the opportunity to assume primary responsibility for certifying individuals in accordance with standards for State certification programs prescribed by the Environmental Protection Agency (EPA).

Our review of programs, carried out by the States of Illinois and Minnesota, to certify individuals to use pesticides indicates that information on pesticide misuse, such as the nature and magnitude of pesticide misuse, is not being regularly and systematically developed and used, even though the data to do so is generally being collected and maintained by the States as part of their pesticide enforcement efforts. Such data is needed to ensure that pesticide applicator certification and training programs are addressing the major pesticide misuse problems. Examples of pesticide misuse include over-application of pesticides, lack of safety precautions, and improper storage. State officials from these States generally agreed that routinely gathering and summarizing pesticide misuse information would be useful but cited a lack of resources as preventing them from doing so. We believe additional costs to develop the information would be negligible.

Our review in Illinois and Minnesota also indicates that certification examinations do not fully conform to the Federal requirements and as a result do not provide assurance of an individual's competency. Illinois and Minnesota State officials acknowledged that some examinations may not meet all the Federal

(089216)

024055/21797

requirements. These officials indicated that as part of their review of test documents they would compare the tests with the Federal requirements to determine if additional questions or revisions are needed.

The Chief of EPA's Compliance Monitoring Branch, in the Pesticide and Toxic Substances Enforcement Division, who is responsible for the certification and training and the programs, indicated that the conditions in Illinois and Minnesota exist in other States. He said that since responsibility for the certification and training programs was transferred to the Enforcement Division in fiscal year 1981, he has become aware of the shortcomings we found during our review and some initial efforts have been taken to improve the situation and other actions will be considered.

OBJECTIVES, SCOPE, AND METHODOLOGY

The Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) specifies that pesticides registered by EPA as restricted-use pesticides can only be applied by individuals who have been certified as competent to use and handle the restricted-use pesticide or by individuals operating under their direct supervision. Our objectives were to (1) evaluate the effectiveness of State certification and training programs in ensuring the competency of individuals to handle and apply pesticides without harming the public, the environment, or themselves, (2) determine how well State certification and training programs are addressing the major types of pesticide misuses that are occurring in the State, and (3) determine EPA's adequacy in monitoring State efforts to ensure that the objectives of FIFRA are being met.

We performed this review at EPA headquarters, EPA Region V in Chicago, and in the States of Illinois and Minnesota. We selected Region V because almost one-fourth of all pesticides used in the United States are applied in the region. We included Illinois and Minnesota because of their large number of individuals certified, our familiarity with Illinois' program from the prior enforcement review, and Region V's suggestion that Minnesota's certification and training program was typical of programs being carried out by the States in Region V.

We reviewed program information for both certification and training, but concentrated our efforts on initial certification of commercial pesticide applicators because the misuse of pesticides by these applicators can directly affect more people in a shorter timespan. This greater impact is reflected in the more stringent Federal requirements governing the certification of commercial applicators.

We interviewed officials responsible for the pesticide applicator certification and training program at EPA headquarters, Office of Pesticides and Toxic Substances Enforcement; EPA Region V, Waste Management Division; the Department of Agriculture (USDA) headquarters, Science and Education Administration, Office of Administrator-Extension; Illinois and Minnesota Departments of Agriculture; Illinois Department of Public Health; University of Illinois, Cooperative Extension Service; and University of Minnesota, Agricultural Extension Service.

We examined Federal, Illinois and Minnesota laws and regulations; EPA, USDA, and the State's guidelines, policies, and procedures; 14 of the States' commercial pesticide applicator certification tests in use during our review; and EPA's and States' training materials, plans, grants, and other program documents.

At the conclusion of our work in EPA Region V and Illinois and Minnesota, we discussed our observations with EPA headquarters and regional officials who generally agreed with our assessment of program weaknesses. The EPA headquarters officials with primary responsibility for the certification and training and pesticide enforcement programs told us that they believe the situation we found in Region V can be found in other regions and that they were considering various actions to resolve these problems. Consequently, we decided to forego further review work and provide EPA with results of our work in Region V and the States of Illinois and Minnesota.

We conducted our review between November 1982 and April 1983. Our review was made in accordance with generally accepted government audit standards.

We did not obtain written agency comments. However, the issues addressed in this report were discussed with EPA officials and their comments are incorporated where appropriate.

CERTIFICATION OF COMPETENCY

Pesticides have been used for many years to help produce the Nation's food supply and preserve its natural resources. However, pesticides can be a mixed blessing. For example, pesticides can control insects, diseases, rodents, weeds, bacteria, and other pests that attack food and fiber and threaten people's health and welfare. On the other hand, if used improperly or without knowledge of their side effects,

pesticides can poison, cause cancer and birth defects, and harm wildlife and the environment. The requirement that restricted-use pesticide only be applied by, or under the direct supervision of, individuals whose competency has been demonstrated and certified reflects the Congress' desire to bring about a better balance between the risks and benefits inherent in pesticide use.

History of pesticide certification

In 1947 the Congress enacted the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA) to regulate the marketing of pesticides and devices using pesticides. The act required Federal registration of pesticides shipped across State lines and made it unlawful to detach, alter, deface, or destroy pesticide instruction labels. The act did not, however, address actual pesticide use or regulate pesticides produced and used within the same State. Consequently, over the years despite extensive labeling and use instructions, and according to an EPA report, pesticide misuse and overuse continued to cause serious effects on health and the environment.

In 1972 the Congress amended FIFRA to (1) extend EPA regulation over all pesticides used in the United States, (2) provide stronger pesticide enforcement, and (3) make pesticide misuse unlawful. As amended, FIFRA required EPA to classify registered pesticides for general or restricted use and provided that restricted-use pesticides can only be applied by, or under the direct supervision of, individuals determined to be competent in their handling and use of pesticides through certification. The certification of the competency of these individuals, hereafter referred to as certified applicator, is generally done by the States in accordance with certification standards prescribed by EPA. More than 1.5 million individuals have been certified since the requirement was established in 1978. This requirement reflected congressional concern that pesticides whose use is restricted by EPA may cause unreasonable adverse effects on the environment or people unless handled and used safely and effectively.

Although EPA prescribes standards for certification, FIFRA, as amended, provides for the States to assume primary responsibility for certifying individuals. To be delegated this responsibility, the States are required to submit their plans for operating certification and training programs to EPA for approval.

FIFRA also contemplates that EPA monitor States' administration of certification programs in accordance with their approved plans. For States without EPA approved plans, FIFRA directs EPA to conduct the certification program.

Certification procedures

The Code of Federal Regulations (CFR) 40, part 171 contains EPA's standards for the certification of commercial and private applicators and for the submission, approval, and maintenance of State plans. For commercial applicators, the regulations establish 10 occupational categories such as agricultural pest control, ornamental and turf pest control, or structural pest control; and the regulations specify standards of competency for each. In addition, the regulations list general standards required for all categories of certified commercial applicators covering such topics as label and labeling comprehension, safety, environment, and application techniques. State standards for certifying commercial applicators must be at least the same as those prescribed in the Federal regulations.

Commercial applicator competence for using and handling pesticides is determined through written examinations. All commercial applicators are required to demonstrate practical knowledge of the principles and practices of pest control and the safe use of pesticides from the general standards and have knowledge of the standards within their specific occupational category. Commercial applicators are certified anywhere from 1 to 3 years in most States. Recertification practices vary from written examination to training course attendance. The regulations state that the certification program must ensure that certified applicators continue to meet the requirements of changing technology and assure a continuing level of competency to use pesticides safely and properly.

EPA has approved certifications plans in 48 States and the District of Columbia, Puerto Rico, Virgin Islands, and Guam. EPA conducts certification programs in two States--Colorado and Nebraska. FIFRA authorizes EPA to fund up to 50 percent of the anticipated cost of each State's certification and training program. Since fiscal year 1974, EPA has provided over \$28 million for certification and training (\$14 million each) with annual funding varying between \$2 million and \$3 million over the last 5 years. EPA, through State cooperative agreements, allocates certification funds to State lead agencies as designated in approved State plans and training funds to State Cooperative Extension Services through cooperative agreements with USDA.

BETTER INFORMATION ON PESTICIDE MISUSE
NEEDS TO BE DEVELOPED FOR
CERTIFICATION AND TRAINING PROGRAMS

Pesticide misuse continues to be a national problem. According to an EPA nationwide study in fiscal year 1981, there were 13,420 pesticide use/misuse inspections that resulted in 3,034 enforcement actions for misuse. Enforcement actions include issuing warning letters, imposing fines, and revoking a certification. In Illinois and Minnesota during fiscal year 1982, there were 1,138 use/misuse inspections that resulted in 378 enforcement actions for misuse. However, in these States enforcement program data was not regularly analyzed and aggregated in a way that would facilitate revisions to the certification and training programs so that they could better address the major misuse problems being experienced. Consequently, there is little assurance that the certification and training programs are properly linked with the pesticide enforcement programs to deter and reduce pesticide misuse. Also, EPA has not stressed to the States the importance of using pesticide misuse information in meeting the overall goals and objectives of the certification program.

Certification and training
link to enforcement

The protection of the public and environment from unnecessary exposure to hazardous pesticides is the common goal that links the certification and training and enforcement programs. On their own, each program contributes to the goal: the certification and training program allows only certified applicators to use or supervise the use of dangerous pesticides; the enforcement program conducts inspections to enforce pesticide laws and certification requirements. When properly linked together, both programs protect the public and environment by deterring and reducing pesticide misuse.

Ideally, the certification and training and enforcement programs should form a closed-loop management information and feedback system. Within the system, information from the enforcement program would be developed and used in directing the certification and training program to address pesticide misuse problems. For example, information from enforcement inspections about the nature and magnitude of pesticide misuse would be gathered, analyzed, summarized, and used to revise examinations and training materials so certification testing and training can address major pesticide misuse problems. Such information would improve overall program quality and direction.

EPA has recognized the importance of linking the two programs. A 1980 Enforcement Division study acknowledged the need to merge certification and training with enforcement and discussed enforcement program information needed to evaluate and improve certification program effectiveness. In fiscal year 1981, EPA transferred certification and training responsibility to the Pesticides and Toxic Substances Enforcement Division and issued combined certification and enforcement grant regulations.

States have not linked certification and training with enforcement

The States of Illinois and Minnesota have not linked their certification and training and enforcement programs. Although not required, the States are not routinely and systematically gathering, analyzing, and summarizing pesticide misuse information such as the number and type of misuse violations, the underlying causes of misuse, the circumstances surrounding the misuse, and the types of violators. Without this basic program management information, State officials cannot be sure that their certification and training programs are addressing the major misuse problems that the State is experiencing.

The following are instances where the two States have summarized some pesticide misuse information but such efforts were infrequent and limited in terms of the information developed. Illinois and Minnesota reviewed and summarized prior inspection data to meet EPA's priority-setting requirements for fiscal year 1983 pesticide enforcement grants; Illinois summarized fiscal year 1982 pesticide violations and complaints as support for a State legislative proposal to broaden the certification program; and Minnesota gathered data on the number and types of fiscal year 1982 misuse violations in response to a one-time EPA request. These efforts, however, were singular rather than ongoing and were more statistical rather than program oriented. Information on the types of applicators and the causes and circumstances of misuse occurrences was not analyzed nor summarized.

In our opinion, without program management information, States cannot be sure that their certification and training materials are addressing major pesticide misuse problems. For example, officials of the Illinois and Minnesota Departments of Agriculture and the Illinois Department of Public Health acknowledged that pesticide misuse caused by uncertified applicators working under the supervision of certified applicators may be a problem but information from enforcement

records had not been analyzed to determine the extent. However, the Illinois and Minnesota Departments of Agriculture officials said data on applicator type is routinely recorded during enforcement inspections. Our review of 14 Illinois and Minnesota commercial applicator examinations showed that none questioned applicator knowledge of supervisory requirements.

Although the development of program management information on pesticide misuse is an important first step in linking the enforcement program to the certification and training programs, States cannot fully close the loop unless they use the information developed. For example, information from Minnesota's 1983 pesticide misuse documents showed that misuse from aerial spraying of pesticides (aerial drift) is the State's major pesticide problem. Yet this knowledge has not been applied to the certification program. Although we do not know how many questions should be included in a test, we found that the aerial applicator test for certifying the competence of individuals to apply pesticides by aerial spraying contains only one question on drift. By comparison, the ground applicator test has four drift questions.

The State program officials generally agreed that routinely gathering and summarizing pesticide misuse information would be useful and more efficient than responding to periodic, one-time requests for data. However, the officials cited a lack of resources as preventing implementation of such a systematic approach now.

We believe, however, that the States have the necessary processes in place to develop basic program management information and link the two programs. Through their pesticide enforcement programs, the States perform use and misuse inspections which EPA and State officials maintain should document the pertinent facts of each case. In Illinois and Minnesota, this inspection report information, developed by local inspectors, is transferred to the State central office for general review, violation determination, and potential enforcement action. This central control could serve as the focal point for routinely and systematically gathering, analyzing, and summarizing basic program management information. States would then need to ensure that the information was fed back to the proper certification and training officials. Although we made no study, we believe additional costs to develop the information would be negligible because State central offices already manually review all inspection documentation and a routine, systematic process would eliminate costly, periodic data gathering efforts for annual priority setting and one-time special information requests.

Better guidance is needed for EPA regional office evaluations of State certification training and enforcement grant programs

EPA headquarters' guidance to its regional offices for reviewing grant programs requires them to make at least two State visits per year, one of which is to be an indepth qualitative year-end review. The guidance provides regions with questions for use in performing year-end State evaluations including some question dealing with qualitative program aspects such as what were the major causes of pesticide violations. The guidance, however, does not focus on how well efforts under the enforcement, certification and training programs are being coordinated. Rather, it calls for the assessment of some qualitative aspects of each program separately, thereby failing to consider the overall importance of management information in linking the two programs. EPA pesticide enforcement office officials have indicated that they are considering changes to their guidance to overcome the situation described above.

IMPROVEMENTS NEEDED IN STATE COMMERCIAL EXAMINATIONS TO BETTER ASSURE COMPETENCY

Illinois and Minnesota certification examinations do not fully assess commercial applicator competency in using and handling pesticides, as required by Federal Regulations. As a result, there is no assurance that individuals who were certified through the use of such tests have the ability to properly handle dangerous pesticides and protect the public and environment from the possible ill-effects of improper pesticide use as is required by FIFRA. EPA has contributed to this situation because it has never developed criteria for evaluating test quality and has not conducted indepth reviews of examinations since 1976.

Commercial applicator examinations do not meet Federal standards

Our review of 14 general and category specific commercial applicator examinations in Illinois and Minnesota disclosed that none of the tests fully complied with Federal requirements. These requirements include

- test questions on general standards for all occupational categories and specific standards for each occupation,

--knowledge of supervisory responsibilities for directing uncertified applicators, and

--tests based on examples of problems and situations.

Of the 14 examinations we reviewed, 9 did not include questions on the required general and specific occupational standards. For example, a Minnesota examination does not include questions on the environmental consequences of pesticide use and misuse, although Federal, general competency standards require testing on this subject. Also, an Illinois Department of Public Health examination specifically used for applicators who control insects and rodents does not test required knowledge of conditions leading to hazardous human exposure. Federal competency standards emphasize that since pesticide exposure to babies, children, pregnant women, and elderly people is frequently a potential problem, applicators must demonstrate knowledge of the factors that may lead to a hazardous situation.

None of the 14 State examinations include questions on supervision of noncertified applicators. According to 40 CFR 171.6, certified commercial applicators must demonstrate knowledge of supervisory requirements, including labeling, regarding the application of restricted-use pesticides by individuals who have not been certified. Since FIFRA allows uncertified individuals to use restricted pesticides if they are under the direct supervision of an individual who has been certified, knowledge of supervisory responsibilities is essential in assuring proper use of dangerous pesticides by noncertified persons.

Although 40 CFR 171.4(b) states that testing shall be based on examples of problems and situations, 3 of the 14 examinations do not meet this requirement. For example, most questions on a Minnesota agricultural applicator examination do not test applicator competency in reacting to situations and problems. Rather, most questions determine applicators' knowledge of definitions and general facts. Other examinations, such as the Illinois Department of Public Health termite control examination, effectively adhere to this Federal requirement by extensively questioning applicators on proper pesticide treatments to use in given situations.

Although Illinois and Minnesota State Departments of Agriculture and Illinois Department of Public Health officials noted that Federal standards were considered during test development and subsequent revisions, they acknowledged examinations do not always meet requirements. The Minnesota

Department of Agriculture representative conceded that some Federal requirements may have been overlooked. The Illinois Department of Agriculture official believed that requirements are adequately covered at annual training sessions. However, Federal regulations require commercial applicators to demonstrate competency through examinations. The Illinois Department of Public Health official stated that the Federal, general standards do not apply to some applicators. However, regulations require that to be certified, all commercial applicators must demonstrate knowledge of all general standards.

These State officials indicated that as part of their normal review of the test documents, they intend to compare the tests with the Federal requirements to see if additional questions or revisions are needed.

EPA Region V is not monitoring examinations

EPA Region V has not performed any substantive reviews of Illinois and Minnesota commercial applicator examinations to ensure compliance with Federal standards since 1976. Although evaluations of State certification programs are conducted twice each year, the EPA Region V project officer for the Minnesota program stated that review of examinations during these mid- and year-end evaluations is very superficial at best. The EPA headquarters' officials responsible for the certification and training and enforcement programs concurred that regional office review of examinations generally needs to be strengthened.

In addition to not ensuring examination compliance with Federal standards, EPA Region V has not completely reviewed test quality despite questioning some State examinations early in the certification program. In 1976, a pesticide program specialist from EPA Region V noted that the answers to many of Minnesota's examination questions were obvious to a reasonable person with no pest control knowledge. However, EPA Region V never completely reviewed the quality of Minnesota and Illinois examinations. Our review of current Minnesota examinations showed that many questions continue to be self-evident to people with no pest control knowledge. As an example, one true/false question merely asks if insecticides are used for insect control. According to the EPA Region V project officer for the Minnesota Program and the region's pesticide section chief, specific criteria to regional offices have generally not assessed State certification tests for compliance with the Federal requirements and adequacy for demonstrating competency

because they were never provided with criteria for doing so. The Chief of EPA's Compliance Monitoring Branch confirmed that such criteria were not provided to the regions.

CONCLUSIONS

EPA and the States of Illinois and Minnesota have not linked the certification and training and enforcement programs to deter and reduce pesticide misuse. These States are not routinely and systematically developing the basic program management information necessary to direct certification and training to major pesticide misuse problems. EPA evaluations of the State programs have not addressed such qualitative program elements concentrating instead on the more quantitative program outputs. EPA headquarters' grant evaluation guidance does not focus on how well the certification and training and enforcement programs are being coordinated.

Illinois' and Minnesota's pesticide commercial examinations do not meet all Federal certification requirements, thereby limiting EPA's and the States' assurance that applicators are competent in using and handling restricted pesticides safely. EPA has no criteria for evaluating test quality and has conducted no indepth test reviews since 1976.

In discussing the findings of our work in Region V and the States of Illinois and Minnesota with the EPA headquarters' officials responsible for the certification and training and enforcement program, we were advised that the situation we found in Illinois and Minnesota probably exists in other regions and States.

RECOMMENDATIONS

We recommend that the EPA Administrator direct that the following actions be taken.

- Include a requirement in State cooperative agreements that States develop basic program management information (as indicated on p. 7) on major pesticide misuse problems for use by the certification and training programs.
- Develop guidance for EPA regions to evaluate State efforts in using pesticide misuse data to ensure that its certification and training programs are addressing the major pesticide misuse problems that the State is experiencing.

--Develop criteria and guidance for EPA regions to evaluate State commercial applicator examinations.

COMMENTS OF RESPONSIBLE AGENCY OFFICIALS

A draft of the report was reviewed by the Acting Assistant Administrator for Pesticides and Toxic Substances and other responsible agency officials. These officials expressed general agreement with the information presented in our report and with our conclusions and recommendations.

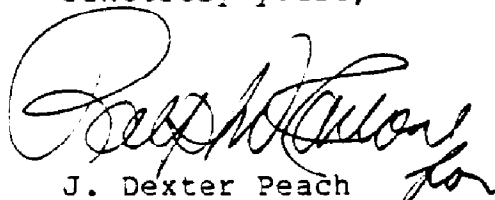
They indicated that the need for information feedback between the enforcement program and the certification and training programs is something that they are working to achieve. The guidance they provided to the States for the fiscal year 1984 grant requests encouraged and provided instructions on how the States could, at their discretion, submit a consolidated grant request for enforcement, certification, and training grants. This change was intended to foster better coordination between the programs and set the stage for fiscal year 1985 when EPA will require the States to develop the information feedback loop recommended by the draft report. When this is completed they will have accomplished what we have stated as our first recommendation. Regarding our second and third recommendations, the EPA officials said that they will be developing guidance to the regional offices for evaluating (1) the State's efforts in developing and using an adequate information feedback loop between the programs and (2) State commercial applicator tests.

- - - -

As you know, 31 U.S.C. §720 requires the head of a Federal agency to submit a written statement on actions taken on our recommendations to the Senate Committee on Governmental Affairs and the House Committee on Government Operations not later than 60 days after the date of the report and to the House and Senate Committees on Appropriations with the agency's first request for appropriations made more than 60 days after the date of the report.

We are sending copies of this report to the Director, Office of Management and Budget; the above-mentioned Committees; Members of Congress who have expressed an interest in pesticide regulation; and other interested parties.

Sincerely yours,


J. Dexter Peach
Director